

CLAIMS

1. An inverter apparatus having a three-phase inverter configured to include paired switching elements connected in a bridge configuration and to convert a power supply voltage, which is supplied from a dc power supply, by said switching elements into an ac voltage, characterized in that:

an inverter control portion has a simultaneous switching prevention function of delaying a turn-on operation of each of said switching elements, which correspond to phases other than a phase corresponding to an optional one of said switching elements and also correspond to an electrode opposite to an electrode corresponding to said optional one of said switching elements, by a predetermined time in a case where a turn-on command signal for turning on each of said switching elements, which correspond to the other phases, is generated within a predetermined time period since turn-off of said optional one of said switching elements.

2. An inverter apparatus having a three-phase inverter configured to include paired switching elements connected in a bridge configuration and to convert a power supply voltage, which is supplied from a dc power supply, by said switching elements into an ac voltage, characterized in that:

an inverter control portion has a simultaneous switching

prevention function of delaying a turn-off operation of each of said switching elements, which correspond to phases other than a phase corresponding to an optional one of said switching elements and also correspond to an electrode opposite to an electrode corresponding to said optional one of said switching elements, by a predetermined time in a case where a turn-off command signal for turning off each of said switching elements, which correspond to the other phases, is generated within a predetermined time period since turn-on of said optional one of said switching elements.

3. An inverter apparatus having a three-phase inverter configured to include paired switching elements connected in a bridge configuration and to convert a power supply voltage, which is supplied from a dc power supply, by said switching elements into an ac voltage, characterized in that:

an inverter control portion has a simultaneous switching prevention function of delaying a turn-on operation of each of said switching elements, which correspond to phases other than a phase corresponding to an optional one of said switching elements and also correspond to an electrode opposite to an electrode corresponding to said optional one of said switching elements, by a predetermined time in a case where a turn-on command signal for turning on each of said switching elements, which correspond to the other phases, is generated within a

predetermined time period since turn-off of said optional one of said switching elements, and also delaying a turn-off operation of each of said switching elements, which correspond to phases other than a phase corresponding to an optional one of said switching elements and also correspond to an electrode opposite to an electrode corresponding to said optional one of said switching elements, by a predetermined time in a case where a turn-off command signal for turning off each of said switching elements, which correspond to the other phases, is generated within a predetermined time period since turn-on of said optional one of said switching elements.

4. The inverter apparatus according to one of claims 1 to 3, wherein all of the simultaneous switching prevention function is realized by software in said inverter control portion.

5. The inverter apparatus according to one of claims 1 to 3, characterized in that:

the simultaneous switching prevention function is achieved by a simultaneous switching prevention circuit including a predetermined-post-turning-off-time generating circuit, which is adapted to generate a predetermined time that elapses after turn-off of the optional one of said switching elements and/or a predetermined-post-turning-on-time

generating circuit which is adapted to generate a predetermined time that elapses after turn-on of the optional one of said switching elements, and a simultaneous switching prevention logic circuit.

6. The inverter apparatus according to one of claims 1 to 5, wherein said switching elements are Si-GTO elements.

7. The inverter apparatus according to one of claims 1 to 5, wherein said switching elements are SiC-GTO elements.

8. The inverter apparatus according to one of claims 1 to 5, wherein said switching elements are wide-gap semiconductors including diamond and GaN.